

ON A COLLECTION OF *ORTHOPTERA* FROM  
THE CAROLINE ISLANDS FROM THE BERNICE P. BISHOP MUSEUM OF HONOLULU

BY

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(Láms. IX-XI)

Through the kindness of Mr. E. C. Zimmerman, formerly director of the Bernice P. Bishop Museum of Honolulu, I got for study, several years ago a collection of Orthoptera, collected in the Caroline Islands by Y. Kondo, S. Otomo and Z. Ono. Part of the collection was studied some years ago and published (Willemse, 1942), the remaining part will be published now.

As far as can be traced from literature, very little is known on the Orthoptera of these Islands and only a few species are described from the Caroline Isl. itself. It will be usefull to give a list, made as complete as possible, of all hitherto known species occuring in these islands.

Order **DICTYOPTERA**

Suborder **Blattodea**

Fam. **EPILAMPRIDAE**

***Homalopteryx pelewensis* Saussure var. *atropunctata* nov. var.**

The collection contains an adult female and two larvae of this species, which do agree in every respect with the original description. The principal differences are the longer elytra and the coloration.



Elytra and wings longer, overreaching the top of the abdomen. The number of spines on the anterior margin of the anterior femur is 3 on the right and 4 on the left femur. The coloration is not of a uniformly brownish, but there are several blackish brown or dark spots on the lower surface of the body. Vertex with a transverse, narrow dark stripe on the frons, not quite reaching the labrum. Coxae of all legs with a small dark, round spot near the base and near the apex. Femora from above with a brown stripe, at the knee more blackish brown. Abdomen from above with a dark, narrow median stripe; from below on each sternit with a round, small dark spot on both sides. Last ventral segment with a small dark spot in the middle at the base. These differences are, where the male is still unknown, not sufficient to create a new species and I prefer to describe it as a variety (fig. 1, lam. IX).

	♀
Length of body.....	27 mm.
Length of pronotum.....	8 »
Width of pronotum.....	12 »
Length of elytron.....	19 »

Locality: Caroline Isl. (Angaur Isl., 15.IV.26), coll. Y. Kondo. Type ♀, Mus. Honolulu. Besides the adult specimen there are two larvae, from the Palao Isl. (Melekeiok) captured on 7 and 8 April 36 by Z. Ono.

The larva differs from the imago in having a more dark brownish pattern from above, except the sides of the thorax. The dark points on the different sternits are more elongate, while the sternits have a row of small brown points along their posterior border.

Fam. **ECTOBIIDAE**

Subfam. **Pseudomopinae**

**Blatella lituricollis** Walker.

Ponape Isl. (Shikere, 15.3.36), coll. Z. Ono.



Fam. **BLATTIDAE**

Subfam. **Blattinae**

**Cutilia nitida** Brunner v. Wattenwyl.

Truk isl. (Moen Isl., 21.12.35, coll. Z. Ono; one larva, Dublon Isl., 22.12.35).  
coll. Z. Ono.

**Periplaneta americana** Linn.

Truk Isl. (Dublon Isl., 1.5.36), coll. Z. Ono.

**Periplaneta australasiae** Fabr.

Truk Isl. 29.12.35 (Dublon Isl., 23.12.35).

Fam. **PANCHLORIDAE**

**Pycnoscelis surinamensis** Linn.

Truk Isl. (Dublon Isl., 20.12.35), and 3 larvae.

**Diploptera dytiscoides** Serville

Truk Isl. (Dublon Isl., 25.12.35), coll. Z. Ono; Kursae Isl. (Mt. Wakapp, 26.1.36), coll. Z. Ono.

Fam. **PANESTHIIDAE**

**Panesthia** sp. larva

Ponape Isl. (Mt. Tolomain, 5.3.36), coll. Z. Ono.

Besides these, there were species belonging to the subfam. *Ectobiinae* and *Pseudomopinae*, but lack of sufficient material for comparison was the reason that I did not succeed in their determination.



Suborder **Mantodea**Fam. **MANTIDAE**Subfam. **Acromantinae****Anaxarcha graminea** Stål.

Peleliu Isl., 1 ♀, coll. Z. Ono.

Order **CHÉLEUTOPTERA**Fam. **PHASMIDAE**Subfam. **Phibalosominae****Megacrania alpheus** Westwood

1 ♀, Palao Isl. ?, coll. Z. Ono.

Fam. **PHYLLIIDAE****Chitoniscus** sp. larva.

Peleliu Isl., coll. Z. Ono.

Fam. **PSEUDOPHASMIDAE**Subfam. **Heteropteryginae****Heterocopus leprosus** Redtenbacher.

The female was known to occur in the East and West Carolines. Till now the male was unknown. The collection contains a male specimen, which will be described below.

Description of the male: Body robust, size medium, surface



granulose with spines, body dorso-ventral flattened; limbs stout. Head longer as broad, subquadrate, slightly narrowing anteriorly. Antenna slightly attenuate towards the apex, as long as the anterior limb. composed of about 25 joints which are setose. First antennal joint flattened, subquadrate, slightly longer as broad, on both sides with a faint longitudinal impression; second joint somewhat longer as broad, the remaining joints elongated, about three to four times as long as broad, except some basal ones, which are somewhat shorter. Eyes prominent, small, globose; ocelli absent. Occiput with lateral and median coronals<sup>1</sup> spinose, just before the median coronals a pair of occipitals which are longer and situated a little more lateral, supra orbital series and gulars small, occipital medials practically absent; supra-antennals only slightly indicated, vertex on this place slightly depressed.

Pronotum longer as broad, anterior pronotals large and spinose; antero-lateral pronotals small, bordering the prothoracic foramen from above; anterior mesal pronotals very low, scarcely indicated and situated just behind the anterior margin of the pronotum; lateral pronotals more prominent than the medial pronotals, but both indicated only as small tubercles; posterior pronotals small, low; inter-posterior pronotals scarcely indicated. Just behind the anterior pronotals a distinct transverse sulcus. Posterior margin in the middle impressed.

Mesonotum widened posteriorly, irregularly granulose; behind the anterior margin with 4 spined anterior mesonotals and on both sides with a well developed antero-lateral mesonotal. Lateral margin with 4-5 small spines. Metanotum somewhat longer as broad, disc with numerous small granulae; lateral margin with 2-3 small lateral metanotals and 2-3 supra coxals, which are much larger.

Median segment granulose, broader as long, about half as long as the metanotum; meso- and metanotum and median segment with a distinct, low and obtuse median keel, which at the posterior margin of the median segment terminates into a small, obtuse tubercle.

<sup>1</sup> For the terminology see: «The Orthoptera of the Philippine Islands», Part I, by James A. G. Rehn and John W. H. Rehn. *Proc. Acad. Natur. Sc. Philadelphia*, vol. XC, 1938, pp. 395-398.



Abdomen slightly flattened with an indication of a median keel, more distinct in the apical half, with a more or less distinct small tubercel in the middle of the posterior margin. The median keel is slightly sulcated in the last four segments.

Abdomen from above granulose, with some more or less regularly arranged rows of low tubercels, especially near the posterior margin of each tergite. Supra analplate very small, narrow, broader as long, posterior margin in the middle slightly concave.

Tenth tergite with the lateral margin parallel till the middle, narrowing from the middle backwards, posterior margin nearly straight.

Prosternum with a rounded, low tuberosity along the inner margin of the anterior coxae and with a small spine on both sides of its surface.

Mesosternum and metasternum granulose, in the middle with a median, obtuse keel, composed of a row of rounded elevations; on both sides with a row of three and on the metasternum of two small spines. Margins of the middle coxae strongly elevated and granulose.

Abdomen from below with a median keel, less distinct in the apical segments; first, second and third sternite besides with a row of two or three small spines. Subgenital plate bowlshaped, with a median keel, setose, posterior margin obtuse; median keel, in profile S-shaped. Cercus short, straight, obtuse.

Anterior legs strong. Trochanter with a strong spine on its outer margin, directed outwards and with two, much smaller ones at the coxal margin.

Anterior femur seen in profile thickened towards the apex; its whole surface granulose, with, except the lower surface, transverse ridges; upper margin and outer margin with a row of 3-4 small, obtuse spines, lower margin near the apex with two strong spines at the inner side and two lower spines at the outer side; the whole femur is, seen from above, slightly bent.

Anterior tibia slightly curved, quadrate, margins densely setose with stiff hairs.

Median legs strong. Trochanter along the coxal margin with some spines.

Median femur as the anterior one, but not thickened towards



the apex, in profile, nearly straight, a little shorter than the anterior one, upper margin with 3-4 spines, outer margin with 3 low spines, lower outer margin with a row of three small and two stronger spines, lower inner margin with a row of three, still smaller spines at the lower outer margin and two stronger ones. Median tibia as the anterior one.

Posterior femur strong, quadrate, straight, from above with four small, low spines on the outer margin and four stronger spines on the inner margin, from below with 5-7 strong spines on both sides.

Posterior trochanter with a row of 3-4 strong spines along the coxal margin.

Hind tibia slightly curved, with an indication of some spines below.

General coloration brown to dark brown, legs darker coloured (fig. 2, lam. IX).

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	♂
Length of body.....	44 mm.
Length of antenna.....	18 »
Length of ant. leg.....	21 »
Length of pronotum.....	4 »
Width of pronotum.....	4,5 »
Length of mesonotum.....	9 »
Width of mesonotum.....	7 »
Length of metanotum.....	4 »
Width of metanotum.....	8 »
Length of median segment...	2,5 »
Length of anterior femur....	9 »
Length of median femur.....	8,5 »
Length of posterior femur.....	10,5 »

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Locality: Peleliu Isl., 20.4.36; coll. Z. Ono, coll. Mus. Honolulu.



Order **ORTHOPTERA**Superfam. **Tettigonioidea**Fam. **PHANEROPTERIDAE**Subfam. **Phaneropterinae****Phaulula trukensis** nov. spec.

Description after the male and female.

Vertex convex, fastigium of vertex narrowly V-shaped, shallowly sulcate, margins in the male narrowing anteriorly, in the female subparallel.

Pronotum with surface smooth, lateral lobe in the male about as long as broad, in the female distinctly higher as broad. Elytra and wings fully developed, reaching about the middle of hind tibia. Elytra relatively broad, v. mediastina perceptible, v. rad. ant. and post. practically connected, terminating into the apex of elytra, v. rad. post. with four branches, which do not fork. V. med. straight, terminating into the apical third of the posterior margin, without branches. Stridulating field of elytra in the male hyalinous in the right one, without veins; opaque in the left one, with an elevated thick transverse vein in the middle.

Penultimate tergite in the male longer than broad, at the apex terminating into a narrow processus with obtuse apex that in its middle is slightly narrowed. Cercus reaching a little beyond the last tergite, cylindrical, slightly curved inwards and upwards, at its apex a little widened, with a short sharp tooth on the inner side. Subgenital plate longer broad, hind margin triangularly excised, in the apical half with a median keel, perhaps due to excision.

In the female the cercus short, curved, sharply pointed. Ovipositor falcate, curving gradually upward to the acute apex, upper and lower margin at the top finely crenulate, its surface without grooves or nodes. Subgenital plate about as long as broad, hind margin rounded with a small median incision and median femora bluntly rounded, of hind femur bluntly median sulcus on the apical half of the disc. Kneelobes of anterior



spinose. Lower margins of femora minutely spined, anterior femur with 3 spines in the male and 3-4 in the female on the inner margin, outer margin without spines; median femur with 3 spines in the male and about 9 in the female on the outer margin, inner margin without spines; hind femur with 11 spines on the inner and 15 on the outer margin in the female (hind legs in the male missing).

General coloration yellowish brown, discolored by preservation in alcohol, apparently pale green in life (fig. 3-5, lam. IX).

	♂	♀
Length of body (shrivelled).....	27 mm.	30 mm.
Length of pronotum.....	5 »	6 »
Width of pronotum.....	3 »	4 »
Depth of lateral lobe.....	4 »	5 »
Width of lateral lobe.....	3 »	4 »
Length of elytra.....	29 »	35 »
Width of elytra.....	7 »	9 »
Length of anterior femur.....	5,5 »	7 »
Length of median femur.....	7,5 »	10 »
Length of hind femur.....		24 »
Length of ovipositor.....		13 »

Locality: Type ♂, Truk Isl., Dublon, 25.12.35; allotype ♀, ibid., 22.12.35, coll. Z. Ono. Type and allotype Mus. Honolulu.

*Phaulula carolinensis* nov. spec.

Description after the male and female.

Vertex less convex than in *trukensis*, fastigium of vertex narrowly V-shaped, shallowly sulcate, margins slightly narrowing anteriorly. Pronotum with surface smooth, lateral lobes in the male a little higher as broad, in the female distinctly higher as broad. Elytra and wings fully developed, overreaching the middle of hind tibia. Elytra distinctly less broad than in *trukensis*, v. mediastina perceptible, v. rad. ant. and post. practically connected in the basal half, from there gradually and slightly diverging and both terminating into the anterior margin just before the apex.

V. rad. post. with four branches, who are not forked. V. med.



straight, terminating into the apical third of the posterior margin, without branches. Stridulating field of elytra in the male hyaline in the right one, without veins; opaque in the left one, with an elevated thick transverse vein in the middle.

Penultimate tergite in the male longer as broad, hind margin rounded, in the middle produced into a long sharp and narrow prolongation. Cercus cylindrical, apical part rectangularly bent inwards, the apex with a sharp tooth. Subgenital plate about as long as broad, lateral margin narrowing apically, posterior margin deeply roundly incised, with on both sides styliform prolongations.

In the female the cercus short, slightly curved, apex sharply pointed.

Ovipositor falcate, gradually curved upwards to the acute apex, upper and lower margin at the top finely crenulate; its surface smooth. Subgenital plate about as long as broad, posterior margin slightly rounded. Kneelobes as in *trukensis*. Lower margins of femora minutely spined. Anterior femur with 2 spines in the male and 3 in the female on the inner margin, outer margin without spines; median femur with 3 spines in the male and 6 in the female on the inner margin, outer margin with no spines in the male and with one spine in the female; hind femur with 10-11 spines in the male and 6-9 spines in the female on the outer margin, with 7 spines in the male and 7 spines in the female on the inner margin.

General coloration yellowish brown, discolored, apparently pale green in life (fig. 6-9, lam. X).

	♂	♀
Length of body.....	20 mm.	22 mm.
Length of pronotum.....	5 »	6 »
Width of pronotum.....	3 »	3,5 »
Depth of lateral lobe.....	4 »	4 »
Width of lateral lobe.....	3,5 »	4 »
Length of elytra.....	29 »	32,5 »
Width of elytra.....	6,5 »	7,5 »
Length of anterior femur.....	5 »	5 »
Length of median femur.....	9 »	9 »
Length of hind femur.....	20 »	20 »
Length of ovipositor.....		11 »



Locality: Type ♂, Ponape Isl., Pounaran-Neipip, 7.3.36; allotype ♀, *ibid.*, Reitao, 1.3.36; paratype ♀, *ibid.*, Shikere, 15.3.36, coll. Z. Ono. Type and allotype Mus. Honolulu.

In the key of Karny (1926, p. 91) both species are running near *ensigera* Karny from the Philippine Isl. They differ both in the form of the last abdominal segments. In *trukensis* the processus of the penultimate tergite in the male is not sharply pointed but slightly widened with obtuse apex, while the subgenital plate in the female at the posterior margin has only a small median incision but is not triangularly excised.

In *carolinensis* which has the same form of penultimate tergite in the male as *ensigera*, the prolongation is not so long while the cercus in the new species is cylindrical, with the apical part rectangularly bent inwards and the apex is not obtuse as in *ensigera*, but provided with a small but distinct tooth. Besides the male subgenital plate bears on its posterior margin on both sides a styliform prolongation. The female differs in the subgenital plate being simply rounded, instead of triangularly incised. Both species differ in the length of the body which in *ensigera* is: ♂ 15.6, ♀ 18 mm.

Besides the differences in the structure of the last abdominal segments, there is an appreciable difference between *trukensis* and *carolinensis* in the elytra, being the elytra in *trukensis* relatively broader than in *carolinensis*, especially in the female.

*Dichophaula inexpectata* nov. spec.

Described after the male.

Vertex narrowly V-shaped, sulcate at the fastigium, margins of which are slightly raised and convergent anteriorly. Pronotum with the surface smooth, lateral lobes roundly inserted and much higher as broad. Elytra and wings fully developed, reaching about the apex of hind tibia.

Elytra with the v. mediastina absent or practically so, v. rad. ant. and posterior connected along the whole line, terminating at the apex in the anterior margin; v. rad. posterior with four branches, the first branch forked in its basal third; v. media



straight with indistinct branches, terminating into the posterior margin of elytra. Stridulating field of elytra in the male on the right and on the left elytron opaque by its dense reticulation.

Penultimate tergite broader as long, its hind margin in the middle roundly excised, on both sides of this incision obliquely truncate. Cercus reaching beyond the penultimate tergite, relatively long, broad at the base, slightly curved, in the middle narrower and cylindrical, at the apex with a small knob with stiff hairs. Subgenital plate longer as broad, narrowing apically, its posterior margin nearly straight or subconcave, on each side with a short styliform process (stylus?); posteriorly with a median keel.

Kneelobes of anterior and median femora obtuse, of hind femur with a short spine. Lower margins of femora minutely spined; anterior femur with 3 spines on the inner and none on the outer margin, median femur with 2 very minute spines on the outer and no spines on the inner margin, hind femur with about 9 outer and 5 inner spines.

General coloration greenish yellow without dark spots, principal veins greenish, apparently almost green in life (fig. 10-12, lam. X).

	♂	
Length of body.....	19 - 20	mm.
Length of pronotum.....	4,5	*
Width of pronotum.....	3 - 3,5	»
Depth of lateral lobe.....	4	»
Width of lateral lobe.....	3	»
Length of elytra.....	30 - 32	»
Width of elytra.....	7,5	*
Length of anterior femur.....	4,5	*
Length of median femur.....	7,5	»
Length of hind femur.....	15	»

Locality: Type ♂, Kusaie Isl., Mt. Wakapp, 2.1.36; paratype ♂, Palao Isl., 8.4.36, coll. Z. Ono. Type Mus. Honolulu.

This species differs from *leefmansii* Karny by the form of the penultimate tergite and cercus; from *longipes* Karny by the



penultimate tergite and subgenital plate; from *habroides* Karny by the penultimate tergite and subgenital plate; from *galeata* Hebard by the penultimate tergite and cercus; from *gracilis* Br. v. Watt. by the cercus and subgenital plate and from *sumatran* Br. v. Watt. by the shorter pronotum and the subgenital plate.

Fam. **CONOCEPHALIDAE**

Suffam. **Listroscelinae**

*Biróa zimmermanni* nov. sp.

The collection contains a specimen belonging to the genus *Biróa* Bol. It agrees not in every respect with the original description by Bolívar but the differences are of minor importance. The pronotum is only very indistinctly carinated in the middle, the genicular lobes of hind femur are both provided with a small spine, anterior femur is as long as the median one and the right elytron of the male, which is the unique specimen before me, has a distinct hyalinous speculum, the left one being rugose by the dense reticulation. Where I only can study the male I think it will be better not to erect a new genus, waiting for the study of the female.

Fastigium of vertex not reaching beyond the basal joint of antenna, on both sides with an elevated ridge, anterior margin triangularly incised; separated from the frontal ridge by a shallow transverse groove. Basal joint of antenna smooth. Pronotum without distinct median keel, there is an indication of it in the metanotum; lateral keels obtuse, in the prozona and mesozona distinctly intersected. in the middle of prozona with one and in the mesozona with two or three blunt spines, the margin in the metazona more or less crenulate. Lateral lobe as broad as long, margins thickened, lower margin rounded.

Elytra reaching the middle of hind tibia, anterior and posterior margin nearly parallel, apex rounded truncate, v. mediastina absent, v. rad. ant. and post. practically connected till the apical third, where they diverge very gradually to the apex of the



elytra; v. rad. post. with 3 branches in the apical half, these branches are simple; v. mediana about in the middle of the elytra, terminating into the posterior margin of the elytra near the apex. Speculum of right elytron hyalinous with few veins, of left elytron opaque, by the dense reticulation. The areolae of the elytra are relatively large. Coxae of all legs with a spine from below, the anterior one also from above. Kneelobes of anterior and median femora with a minute spine on both sides, of hind femora with a distinct sharp spine on both sides. Anterior femora as long as the median ones.

♂: Penultimate tergite broader as long, hind margin rounded with a triangular rounded incision in the middle. Supra analplate very short, partly hidden under the penultimate tergite, triangularly rounded. Cercus cylindrical, curved inwards, slightly attenuated towards the apex, apex with a minute sharp tooth. Subgenital plate longer as broad, on both sides with a low longitudinal keel in the apical half, posterior margin deeply cut into two lobes, at the top of which the short, straight styli are fixed.

General coloration yellowish green, fairly uniformly coloured, without dark spots or spines. Venae of the elytra mostly green. Wings hyalinous (fig. 13, lam. X).

	♂	
Length of body.....	21	mm.
Length of pronotum.....	4,5	»
Length of elytra.....	31	»
Length of anterior femur.....	9	»
Length of median femur.....	9	»
Length of hind femur.....	18	»

Locality: Palao Isl., Melekeiok, 6.4.36, coll. Z. Ono. Type: Mus. Honolulu. The type is unique.

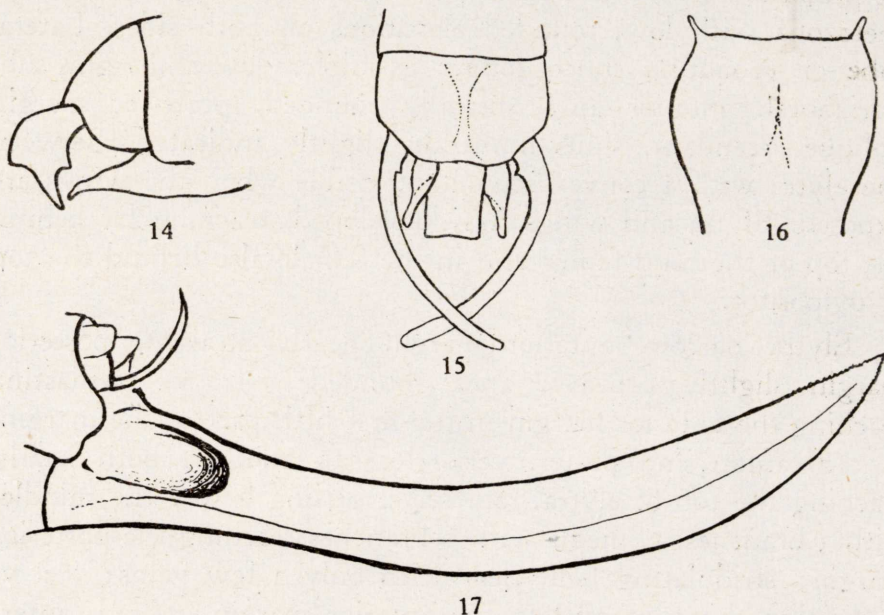
This species differs from the known species (*atrospinos*a Bol., *carinata* Bol., *maculiventris* Bol.) by its small size and the absence of dark spots or stripes.

It is a great pleasure to me to dedicate this species to Mr. Elwood Zimmerman, who just finished his great work on the Insects of Hawai.



*Phisis* sp.

The systematics of the species in this genus is still in a very bad state. The last key to the species was given by Karny (1907) of the eleven, than known, species, where at the moment 24 species are described. The distinguishing features were derived



Figs. 14-17.—14) *Phisis* sp. ♂. Lateral analplate. 15) *Phisis* sp. ♂. Top of abdomen from above. 16) *Phisis* sp. ♂. Subgenital plate. 17) *Phisis* sp. ♀. Ovipositor, cercus.

from the number of spines on the anterior and median femur and tibia. The number of spines however is not always the same in specimens from the same locality. Where from some species only the male or female is known, it makes it still more difficult to dress up a satisfactory key, for the impossibility of using genital features.

The collection contains 5 ♂♂ and one ♀, all from the island Ponape. Till now no *Phisis* sp. was known from the Caroline Isl. and it may be that these specimens belong to a new species or subspecies. I abstain from giving a name and prefer to give a full description, waiting for a revision of the genus which may



be done when more material is at hand and when the types of the known species can be studied.

Size medium, form slender for the genus. Vertex narrow, convex, fastigium of vertex not or slightly overreaching the antennal scrobae, its apex sharply pointed. Maxillary palpi long, last joint somewhat longer than the fourth, weakly and evenly curved, at the apex slightly widened, obtusely rounded. Disc of pronotum with weak sulci, posterior margin slightly concave, metazona with low, rounded elevations on both sides. Lateral lobe of pronotum much longer as high; lower margin subhorizontal, anterior angle broadly rounded, posterior margin oblique ascendant, sinus humeralis slightly indicated. Between the elytra with a convex scutellum, visible when the wings are exposed. Elytra and wings fully developed, reaching far behind the top of the hind femur and in the female also behind the top of ovipositor.

Elytra narrow, anterior margin nearly straight, posterior margin slightly concave, apex rounded; ♂: v. mediastina reaching the anterior margin in the first fifth part of the margin, v. rad. anter. and poster. very close to another, both nearly reaching the top of elytra, rad. sector arising before the middle, with 3 branches, v. media with 6 branches reaching the posterior margin; stridulating field clear with only a few veins; ♀: v. mediastina short, parallel to the anterior margin, v. rad. anter. and posterior very close to another, parallel to the anterior margin, rad. sector connected with the v. media in its middle, with about 9 branches reaching the posterior margin.

Anterior coxa with a distinct spine. Anterior femur with a row of 5 spines on the outer margin and 4-5 on the inner margin. Anterior tibia on both sides with a row of 6-7 spines. Median femur on the outer margin with a row of 4 spines, on the inner margin of one spine. Median tibia on the outer margin with a row of 6 spines, on the inner margin of 5-7 spines.

Hind femur with a row of 8-9 small spines on the outer margin. The spines described above are slightly bent and mostly gradually decreasing in length from the base to the apex of the limb.

Auditory foramina inflated, rimate.

Prosternum with two spines, meso- and metasternum binodulose, in the latter only slightly indicated.



♂: Supra analplate somewhat longer as broad or as long as broad, lateral margins parallel or nearly so, posterior margin in the middle subconcave. Lateral analplate higher than broad, upper margin slightly convex, inner margin subconcave and in the upper part stealthily connected with the abdomen, outer margin slightly concave, at the lower angle produced into a long, more or less sharp spine, lower margin concave, on both sides terminating into a spine, a smaller one at the lower angle of the inner margin and a long one at the lower angle of the outer margin. Cercus long, curved, cylindrical, crossing each other, and with a small blunt spine on the inner side at the base. Subgenital plate somewhat longer as broad, lateral margins widened in the middle of the plate, posterior margin slightly concave or substraight, with a short, straight stylus on both sides.

♀: Supra analplate short, posterior margin with a triangular projection in its middle. Cercus shorter than in the male, curved, cylindrical with the apex acute, without spine at the base. Ovipositor evenly bent upwards, at the top finely crenulate. Subgenital plate longer as broad, from its middle narrowing posteriorly, apex rounded.

General coloration yellowish green, without dark spots. Probably very pale green in life. Top of the ovipositor brown or reddish brown.

	♂	♀
Length of body.....	13 - 15 mm.	15 mm. (without ovipositor)
Length of pronotum.....	3 - 3,5 »	3 »
Width of pronotum.....	2,5 »	3 »
Length of elytra.....	22 - 24 »	27 »
Length of hind femur.....	11 - 12 »	12 »

Locality: Ponape Isl. (Nâ, 24.2.36, coll. S. Otomo, 2 ♂♂; Reitao, 1.3.36, coll. Z. Ono, 2 ♂♂; 1 ♂, 14.3.36, coll. Z. Ono; 1 ♀, 6.3.36, coll. Z. Ono).

In the key of Karny it runs near *pectinata* Guérin Men. known from the isl. Buru, but differs in the shape of the supra analplate of the male, which in *pectinata* has its posterior margin split up into two distinct lobes.



## Fam. MECOPODIDAE

*Segestes unicolor* Redtenbacher.

1 ♀. Palau Isl. (Ogiwal, 10.4.36, coll. Z. Ono).

Subfam. *Agraeinae**Salomona carolina* nov. spec.

♀: Size medium, form robust. Head thick, as broad as the pronotum, face and cheeks coarsely and rugosely punctured, the middle of the frons with the sculpturation less coarse and less rugose, more regular. The impressed points on the frons are subindistinct in the middle of the frons and a little above the clypeal margin, those just below the antennae more or less obsolete. Clypeus about as broad as high, lateral margins narrowing downwards; upper part with transverse sculpturation, lower part with some low, irregular ridges. Vertex smooth with some rows of impressed points, fastigium of vertex short not reaching beyond the first antennal joint, apex compressed laterally, from above with a short obtuse tooth at its base, seen in profile roundly incised just below the top.

Pronotum nearly quadrate, with impressed points, anterior margin nearly straight, posterior margin truncate; principal sulcus not very deep on the disc, much deeper on the lateral lobe. Lateral lobe longer than high.

Elytra reaching a little behind the apex of hind femur or a little longer, narrowing apically; anterior margin convex, posterior margin nearly straight, apex rounded. Subcosta nearly straight, radius with the radial sector arising in the apical third, this sector simple or bifurcate near the apex, the radius itself with still another branch near the apex. Media with a few indistinct branches reaching the posterior margin of elytra, cubitus and analis connected. Wings subcycloid, about as long as elytra, radius simple or bifurcate at the apex, media and cubitus connected at the base along a short distance; 9-10 anal veins. Anterior femora with a row of 5-6 spines from below on both sides, inner genicular lobe with a strong spine, outer genicular



lobe without distinct spine. Anterior tibiae with a row of 6 spines from below on both sides, including the apical one. Median femora with a row of 5-6 spines on the outer and 2-3 small ones on the inner margin from below; inner genicular lobe with a short spine, outer one without distinct spine. Hind femur with a row of 8 spines on the outer lower margin, inner margin smooth.

Outer and inner genicular lobe with a strong spine. Posterior margin of meso- and metasternum on both sides with an obtuse spine.

♀: Ultimate tergite deeply sulcate in the middle. Supraanal plate triangular, rounded at the apex. Cercus thick, conical, slightly curved, apex obtusely pointed, surface granulate. Ovipositor evenly and broadly curved upwards, margins smooth. Subgenital plate short, narrow, more or less bilobate, posterior margin concavely or triangularly excised in the middle.

General coloration brown or yellowish brown. Head and cheeks of the same colour as the body, face however totally black, lower part of clypeus reddish or yellowish brown, with irregular blackish stripes or figures; labrum black with the margins lighter coloured. Mandibles black, joints of maxillary and labial palpi yellow or reddish brown. Antennae reddish brown. Pronotum reddish or yellowish brown, unicolorous. Elytra brownish, veins and veinlets yellowish, with a few dark spots along the principal veins. Wings hyaline, veins yellowish. Legs yellowish brown, the insertion of tibiae and joints of tarsi black or darker coloured. Sternum yellow or yellowish brown, sometimes with a dark spot in the middle, abdomen of the same colour, margins of tergites finely bordered with black or with black stripes, sternites with a narrow black stripe on each side. Ovipositor castaneous brown, lighter coloured at the base and in the middle of her length. ♂ unknown (fig. 18-20, lam. XI).

	♂
Length of body.....	46 - 54 mm.
Length of pronotum.....	10 - 11 »
Length of elytra.....	35 - 36 »
Width of elytra.....	9 »
Length of hind femur..	20 »
Length of ovipositor (in a straight line from base to apex).....	16 »



Locality: Angaur Isl., 17.4.36, coll. Y. Kondo. Type and 7 paratypes, 1 ♀ larva. Type Mus. Honolulu.

*Salomôna dublona* nov. spec.

♀: This species is closely allied to *S. carolina*, but differs in the form of the pronotum, elytra and in the shape of the ovipositor.

Form more robust, head very thick, sculpturation as in *carolina*, pronotum broad and relatively longer, lateral lobe distinctly longer than high, elytra long, reaching a little beyond the middle of hind tibia, broad, anterior margin only slightly convex, posterior margin straight, only slightly narrowing apically, apex broadly rounded, venation of elytra and wing as in *carolina*, media in the wing with a branch near the base and a little behind the middle. Ovipositor stronger curved upwards, especially near the apex.

General coloration reddish brown, head of the same colour as *carolina*, sternum castaneous brown, lighter coloured along the margins, elytra greenish with only a few dark spots along the principal veins. Legs reddish brown, the insertion of the joints of tarsi black. ♂ unknown (fig. 21, lam. 11).

	♀
Length of body.....	45 mm.
Length of pronotum.....	13 »
Length of elytra.....	45 »
Width of elytra.....	13 »
Length of hind femora .....	24 »
Length of ovipositor.....	16 »

Locality: Dublon Isl., 21.12.35, 1 ♀. Type Mus. Honolulu  
The type is unique.



Superfam. **Acridoidea**Fam. **ACRIDIDAE**Subfam. **Oedipodinae****Heteropternis obscurella** Blanch.

Ponape, 14.3.36, 1 ♀; Yap Isl. (Tap, 23.5.36, 1 ♀; Babelthuap Isl., 1 ♀; Palau Isl. (Ngaregolong, 30.4.36, 1 ♂; Melokeiok, 6.4.36, 1 ♀, 1 ♂; Gakipp, 20.4.36, 1 ♀; Galdok, 8.4.36, 1 ♀; all specimens collected by Z. Ono).

**Locusta migratoria** subsp. **manilensis** Meyen.

The collection contains two males and two females. They have never been recorded from these islands before and belong to the subspecies *manilensis*.

It will be useful to give the standard measurements and ratios in the following tabel.

	E	F	P	H	M	C	E/F	P/C	H/C	M/C
No. 1 male.....	28	16,5	5,5	5,5	4	5	1,7	1,1	1,1	0,8
No. 2 male.....	39	21	7,5	7,5	5	5,5	1,8	1,36	1,36	0,9
No. 3 female.....	36	19,5	7	6,5	5,5	6	1,9	1,16	1,8	0,9
No. 4 female.....	37,5	21	7,5	7,5	5,5	6,5	1,8	1,15	1,15	0,89

No. 1.—Palau Isl. (Airai Koigur, 20.4.36).

No. 2.—Palau Isl. (Galdok, 8.4.36).

No. 3.—Palau Isl. (Melokeiok, 7.4.36).

No. 4.—Palau Isl. (Galdok, 8.4.36). All the specimen were collected by Z. Ono.

Fam. **CATANTOPIDAE****Oxya gavis** Walker.

Palau Isl., 8.4.36, 2 ♀♀, coll. Z. Ono.



*Oxya intricata* Stål.

Palau Isl. Truk Isl. Dublon Isl. Yap Isl. Ponape. A long series of 16 ♂♂ and 14 ♀♀, all collected by Z. Ono.

*Valanga ornata* Ramme.

Babelthuap (Melekeiok, 1.4.36, 1 ♀); Angaur Isl., 17.4.36, 2 ♂♂, 1 ♀; Peleliu Isl., 23.4.36, 1 ♂ and 1 ♀; Palau (Ogival, 10.4.36, 1 ♀; Galdok, 8.4.36, 1 ♀; Ngardmau, 5.1.36, 1 ♂; Ngardok, 8.4.36, 1 ♂), all collected by Z. Ono.

## Fam. TETRIGIDAE

*Carolinotettix* nov. gen.

Female: Probably allied to *Apterotettix* Hancock, but differing in some respects, especially in the long and slender antennae and the spine on the upper margin of the hind femur.

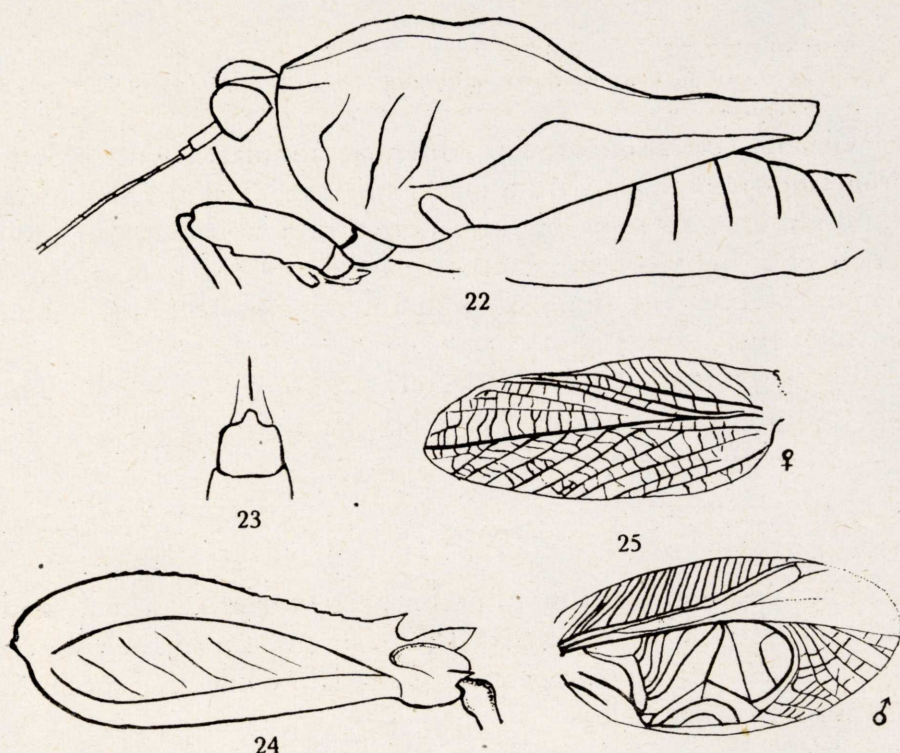
Antennae filiform, about three times the length of anterior femur, composed of elongated joints, which are more than 6 times longer as broad, except the basal and praebasal one which are thicker and much shorter. Basal joint of antennae placed between the lower part of the eyes. Lateral ocelli just above the basal joint of antenna, near the frontal ridge.

Head not projecting above the pronotum; frontal ridge distinctly prominent and finely sulcated between the antennae, clypeal margin triangularly incised. Eyes globose, only slightly projected above the level of the fastigium of vertex. Fastigium of vertex broader than the eye, truncate in front, with a small median keel, lateral keels not or slightly raised. Pronotum not covering the whole of abdomen, tectiform, truncate in front; median keel compressed, sharp, in profile well raised and convex in the anterior part, rather suddenly lowered, not depress, behind the middle, when viewed in profile semitransparent; posterior margin somewhat triangularly truncate; lateral lobes oblique. hind angle laminate, directed sideways, pointed apically. Lateral margin only distinct in the posterior part, indicated by a sharp keel which anteriorly suddenly is bent downwards above the



coxa of the median leg. The surface of the pronotum is rugosely punctured with some callosities, the posterior part of the disc with irregular ridges forming an irregular figure. Elytra and wings absent.

Anterior femora compressed, upper margin slightly convex,



Figs. 22-25.—22) *Carolinotettix montana* nov. gen. e. sp. ♀. Type. 23) *Carolinotettix montana* nov. gen. e. sp. ♀. Subgenital plate. 24) *Carolinotettix montana* nov. gen. e. sp. Hind femur in profile. 25) *Heterotrypus chopardi* nov. sp. Elytron ♂ and ♀.

lower margin with two obtuse teeth; median femora with the upper margin slightly undulated, carinulae on the outer area also undulated, lower margin in the posterior half with a stronger undulation.

Hind femur with the upper margin terminating into a sharp spine, and with a distinct spine, directed backwards a little before the apex; outer and inner kneelobes with a small spine. Hind tibia not or scarcely expanded towards the apex, sulcated from



above. Hind tarsi compressed, the first joint somewhat longer than the two others together. Valves of ovipositor long, slender, straight, apex pointed, margins serrulate. Cercus awl-shaped. Subgenital plate about as long as broad, hind margin triangularly expanded in the middle, which prolongation in profile is curved upwards. ♂ unknown.

*Carolinotettix montana* nov. spec.

General coloration brown. Antennae annulated with brown. Pronotum from above with a black, small stripe at the shoulders. Hind femur with some blackish dots. Hind tibia with an indication of a light brown praegenicular ring. Length of antenna 6 mm., of body 13 mm., of pronotum 6 mm., of hind femur 5.5 mm. (fig. 22-24).

Locality: Ponape (Mt. Nanalaut, 7.3.36, coll. Z. Ono). The type is unique. Type Mus. Honolulu.

*Paratettix* sp.

The collection contains 3 specimen of *Paratettix*, a male and two females from the Palau Isl. I did not succeed in their determination by lack of comparative material, while the specimen also miss their hind legs.

Superfamily Gryllodea<sup>1</sup>

Fam. GRYLLOTALPIDAE

*Gryllotalpa formosana* Shiraki.

It is with some doubt that the specimen before me are identified as being *formosana* Shir. They don't belong to *africana*

<sup>1</sup> I wish to express my sincere thanks to my friend Prof. Dr. L. Chopard, who had the kindness to determine the *Gryllodea* and who was so kind to give notes and informations about the new species.



Palis. d. Beauv., a species with a wide distribution in the Indo Malayan region, differing in the form of the male genitalia. The wings as described by Shiraki are short, only reaching a little beyond the elytra, in the specimen before me they are longer and are about twice as long as the elytra. The ocelli are not smaller than in *africana*. Unfortunately I have no material for comparison with Formosian material.

Locality: Ponape Isl. (Ronkiti, 4.2.36; Truk Isl.) (Moen Isl., 21.12.35); Truk Isl. (Dublon Isl., 26.12.35, at light), coll. Z. Ono.

Fam. **GRYLLIDAE**

**Gryllulus oceanicus** Le Guill.

Palao Isl., 8.4.36, Ngeremlergui Galmiskau, 23.4.36; Ponape Isl., 27.2.36, 14.3.36; Tamataman-Sakir, 20.3.36; Truk Isl. (Dublon Isl., 20.12.35; Moen Isl., 27.12.35). Coll. Z. Ono.

Fam. **MOGOPLISTIDAE**

**Ornebius novarae** Saussure.

Truk Isl. (Dublon Isl., 1.9.36). Coll. Z. Ono.

Fam. **TRIGONIDIIDAE**

**Amusurgus karnyi** Chopard.

Ponape Isl. (Kolonie, 2.2.36). Coll. Z. Ono.

**Metioche flavipes**

Ponape Isl., 14.3.36; Kusaie Isl. (Mt. Matante, 22.1.36); Truk Isl. (Tarik Isl., 7.1.36; Dublon Isl., 20-29.12.35, sea level). Coll. Z. Ono. Some of the specimen



have a somewhat different coloration, having black spots on the vertex and a more or less complete black median band on the pronotum. There are intermediate forms too.

*Rhcnogryllus flavipes* nov. spec.

Male: General coloration yellow, joints of antennae darker coloured. Head a little broader than the pronotum, rostrum at its base a little broader than the first antennal joint, anteriorly narrowing, anterior margin rounded; bearing on its surface some long stiff hairs. Eyes large, round, protruding. Fifth maxilar joint dilated at the apex, oval in transverse section, apex straightly cut and slightly excavated.

Pronotum subquadrate, anterior and posterior margin straight; lateral lobe longer as high, lower margin ascending posteriorly, anterior and posterior angle rounded; margins of the pronotum ciliate with fairly long stiff hairs. Subgenital plate small, triangular, apex more or less pointed. Cercus long, slender. All the legs of the same colour as the body, the first joint of tarsus somewhat darker coloured.

Elytra reaching the top of abdomen, lateral field transparent with four straight, parallel veins, dorsal field yellow transparent with five straight, parallel veins which at the apex are connected with each other two to two; apical margin slightly concave.

Anterior tibia without auditory foramen. Hind tibia with a row of three long spines on both sides; inner spur longer than the outer one.

Metatarsus long with the inner spur longer than the outer one.

Female: Similar to the male as to the coloration and general form.

Ovipositor curved upwards, brownish in the apical half, apical valves crenulate at its margin and terminating into a sharp point.

	♂	♀
Length of body.....	4,5 mm.	4,5 mm.
Length of pronotum.....	1 »	1 »
Length of elytron.....	2 »	2 »
Length of hind femur.....	4,5 »	5 »
Length of ovipositor.....		3 »



Geographical distribution: Caroline Isl. (Kusaie Isl.) (Lele Isl., Mt. Fenkol, 30.1.36; Type ♂ and allotype ♀, 6 paratypes); Kusaie Isl. (Mt. Matante, 22.1.36, 1 paratype), coll. Z. Ono. Type, allotype and paratypes Mus. Honolulu.

This species differs from the other known species of this genus by its coloration, being uniformly yellow.

*Rhcnogryllus limbatus* nov. spec.

Male: General coloration light brown or yellowish brown, joints of antenna brown or yellowish brown, slightly annulated. Head a little broader than the pronotum, rostrum at the base a little broader than the basal antennal joint, anterior margin rounded; bearing on its surface some long stiff hairs. Eyes large, rounded, protruding. Fifth maxilar joint as in *flavipes*. Pronotum as in *flavipes*. Subgenital plate triangular, at the apex slightly concave with on both sides with a minute tooth. Cercus long and slender. Elytra not quite reaching the top of the abdomen, lateral field semitransparent with four straight, parallel veins; dorsal field with five straight, parallel veins, apical margin substraight.

Legs as in *flavipes*. Head yellowish brown, with a blackish transverse band between the eyes on the frons, sometimes more reddish brown. Pronotum yellowish brown, all the margins margined with blackish brown or reddish brown, along the lower margin of lateral lobe somewhat broader margined. Elytra yellowish brown, between the veins with blackish stripes. Legs of the same colour as the body, first joint of the tarsi somewhat darker coloured.

Female: Similar to the male, but somewhat differently coloured. Blackish transverse band between the eyes as in the male, this band is absent in one specimen, or may be somewhat lighter coloured; sometimes with a red spot in the middle of the frons.

Pronotum yellowish or yellowish brown, with the margins very narrowly margined with black or blackish brown, with or without a reddish brown broad band on both sides of the disc.

Elytra uniformly yellowish brown or with a distinct black



transverse band in the middle and the apex broadly margined with blackish brown.

Ovipositor slightly curved upwards, darker coloured at the apex, apical valves finely crenulate at the margin, and terminating into a sharp point.

	♂	♀
Length of body.....	3 mm.	4,5 mm.
Length of pronotum.....	0,75 »	1 »
Length of elytron.....	1,5 »	2 »
Length of hind femur.....	3,5 »	3,5 »
Length of ovipositor.....		1,5 »

Geographical distribution: Caroline Isl. (Kusaie (Lele Isl., Mt. Fenkol, 30.1.36, ♂ Type; 28.1.36, ♀ allotype); Truk Isl. (Dublon Isl., 21.1.35, sweepings); Ponape Isl. (Wone, 17.2.36). Coll. Z. Ono. Type, allotype, paratype, coll. Mus. Honolulu.

This species differs from *flavipes* in the coloration and the much shorter ovipositor.

#### Fam. ENEOPTERIDAE

#### Subfam. Eneopterinae

#### *Lebinthus bitaeniatus* Stål.

Palao Isl. (Aiokasaol, 10.5.36); Angaur Isl., 10.5.36 (Kusaie Isl., 30.1.36). Coll. Z. Ono.

#### *Cardiodactylus novaeguineae* de Haan.

Angaur Isl.; Palao Isl. (Ngeremlengui, 23.4.36). Coll. Z. Ono.



Subfam. *I t a r i n a e****Heterotrypus chopardi*** nov. spec.

Male: Body fairly slender. General coloration blackish brown from above, shining, paler below. Frontal rostrum a slightly narrower than the basal joint of antenna, lateral margins parallel, anterior margin slightly rounded, with on both sides a tuft of blackish brown hairs. Ocelli small, one on each side, the middle one in the middle of the anterior margin of the rostrum. Face yellowish brown, with blackish brown stripes, along the frontal keel; scrobae antennal. More or less completely bordered with blackish brown. Cheeks with some dark stripes.

Antennae and palpi yellowish brown to dark brown; 4th. joint of maxillar palpi shorter than the 3rd; 5th long dilated and truncate at the apex, apex bordered with lighter or darker brown.

Pronotum broader as long, narrowing anteriorly; anterior margin slightly concave in the middle, posterior margin slightly convex or substraight; margin ciliated; disc darker or lighter brown, sometimes with a small, median longitudinal, lighter coloured stripe in the anterior half; lateral lobes yellowish brown in the lower part, lower margin strongly ascending posteriorly: disc and lateral lobes covered with a silky pubescence. Abdomen yellowish brown, tergites bordered at their posterior margin with dark brown; subgenital plate short, triangular apex rounded. Cerci long, straight. Genital lobes notched at the apex and provided with a fine styliform processus; on the inner margin with a sharp tooth.

Anterior and median legs yellowish brown, annulated with incomplete brown rings, femur with two, tibia with three and first joint of tarsus with one ring. Hind femur rather strongly dilated, pubescent, yellowish brown with three dark brown, rather broad bands from above; tibia dark brown with rows of lighter coloured spots on the inner and outer surface, with four rather long spines on each margin, besides denticulated between the spines as follows, external margin 4.4.2.0., internal margin



o.o.o.o.; supero internal spur overreaching the metatarsus, which is armed with a single row of 5 denticles.

Elytra broad, brown, mirror semitransparent, divided into three nearly equal parts, first transverse vein in the mirror straight, without bifurcations, second one rectangularly bent about in its basal third; diagonal vein short, straight and bifurcated near the apex; apical field reduced; about 6 oblique veins of which there are four long ones; 3 chords, two of which are rounded, the third one straight. Lateral field with mediastinal vein bearing 23 branches.

Wings reaching beyond the elytra, overreaching a little the cerci.

Female: General shape and coloration of the male. Pronotum as in the male. Elytra rather short, a little widening towards the middle, from there gradually narrowing a little towards the apex; surface pubescent; mediastinal vein bearing 9 branches, radial vein simple, median vein simple, cubitus in the basal third connected with the median vein, with 4 branches reaching the posterior margin of elytra, anal vein with 3 branches, there are 3 axillar veins, straight and nearly parallel to another. Wings overreaching the elytra, reaching the top of the cerci. Subgenital plate short, triangular, with the apex rounded and slightly concave in the middle. Ovipositor long and slender, with apical valves very small, slightly furrowed from above, from below slightly crenulate at the margins (fig. 25).

	♂	♀
Length of body.....	19,5 mm.	16,5 mm.
Length of pronotum.....	2 »	2 »
Length of elytron.....	18 »	19 »
Length of wing.....	21 »	21 »
Length of hind femur.....	14,5 »	15 »
Length of ovipositor.....		10 »

Geographical distribution: Caroline Isl. (Ponape Isl., Sharaku, 6.2.36, Type ♂, paratype ♂; Palao Isl., 8.4.36, allotype ♀; coll. Z. Ono). Type and allotype Mus. Honolulu.



This species is related to *H. buqueti* Sauss. but differs in the shape of the male genitalia, the darker colour and more elongate form, and in the oblique veins, which are regularly inserted along the anal vein.

Subfam. **Podoscirtinae**

**Aphonoides gracilis** Chopard

Yap Isl. (Dugor, 24.5.36); Ponape Isl. (Kolonie, 2.2.36); Kusaie Isl. (Mt. Fenkol, Lele Isl., 28.1.36; Mt. Matanta, 22.1.36). Coll. Z. Ono.

LIST OF ORTHOPTERA (SENSU LAT.) KNOWN FROM THE CAROLINE ISLANDS

Suborder **Blattodea**

1. *Loboptera dimidiatipes* Bol. I. W. Carol. Asor Isl (Utilithi Atoll) <sup>1</sup>.
2. *Cutilia soror* Br. v. W. E. Carol. Fassarai Isl.
3. *Cutilia nitida* Br. v. W. error srib. *C. soror* Rehn 1945, p. 2). W. Carol Asor Isl. Truk Isl. E. Carol. Moen Isl., Dublon Isl.
4. *Periplaneta americana* L. W. Carol. Dublon Isl.
5. *Periplaneta australasiae* Fabr. W. Carol. Truk Isl., E. Carol. Dublon Isl.
6. *Blatella lituricollis* Walk. E. Carol. Ponape Isl.
7. *Plycnoscelis surinamensis* L. W. Carol. Truk Isl.
8. *Diploptera dytisoides* Serv. W. Carol. Truk Isl. E. Carol. Kusaie Isl.
9. *Panesthia* sp. E. Carol. Ponape Isl.
10. *Homalopteryx pelewensis* Sauss. W. Carol. Palau Isl <sup>2</sup>.
- 10 a. *Homalopteryx pelewensis* var. *atropunctata* n. var. W. Carol. Angaur Isl.

Suborder **Mantodea**

11. *Anaxarcha graminea* Stal. E. Carol. Peleliu Isl.

<sup>1</sup> Ulithi = Ululssi, Ulussi, Uluti, Utili, Ulewi, Ugeu, Egeu, the Mackenzie Isl., Los Reyes, Garbanzos.

<sup>2</sup> Palau = Pelew, Palao.



Suborder **Phasmoptera**

12. *Heterocopus leprosus* Redt. W. Carol. Palau Isl. E. Carol. Ponape Isl.
13. *Chitoniscus brachysoma* Sharp. W. Carol. Palau Isl.
14. *Megacrania alpheus* Westw. W. Carol. Palau Isl. E. Carol. Ponape Isl.
15. *Acanthograeffea modesta* Günther. W. Carol. Truk Isl.
16. *Graeffea coccophaga* Newp. Caroline Isl.
17. *Diagoras ephialtes* Stål. W. Carol. Palau Isl.
18. *Hermarchus godeffroyi* Redt. E. Carol. Ponape Isl.

Suborder **Eurifera**Superfam. **TETTIGONIOIDEA**

19. *Phaulula trukensis* nov. sp. W. Carol. Truk Isl.
20. *Phaulula carolinensis* nov. spec. E. Carol. Ponape Isl.
21. *Dichophaula inexpectata* nov. sp. W. Carol. Kusaie Isl. E. Carol. Palao Isl.
22. *Biróa zimmermanni* nov. sp. E. Carol. Palao Isl.
23. *Phisis* sp. E. Carol. Ponape Isl.
24. *Conocephalus maculatus* Le Guillou. E. Carol. Palao Isl.
25. *Conocephalus carolinensis* Will. W. Carol. Truk Isl. E. Carol. Ponape Isl. Palao Isl.
- 25 a. *Conocephalus carolinensis* f. *macroptera* Will. E. Carol. Ponape Isl.
26. *Xiphidion longipenne* var. *longicornis* Redt. W. Carol. Yap Isl., Palau Isl.
27. *Euconocephalus lineatipes* Bol. I. W. Carol. Truk Isl. Yap Isl.
28. *Euconocephalus pallidus* Redt. W. Carol. Truk Isl.
29. *Euconocephalus gracilis* Redt. W. Carol. Yap Isl. Palau Isl.
30. *Euconocephalus extensor* Walker. W. Carol. Palau Isl.
31. *Segestes unicolor* Redt. W. Carol. Palau Isl.
32. *Dasyphleps karschi* Karny. E. Carol. Kusaie Isl.
33. *Salomona carolina* nov. spec. W. Carol. Angaur Isl.
34. *Salomona dublona* nov. spec. W. Carol. Dublon Isl.

Superfam. **GRYLLACRIDOIDEA**Fam. **Gryllacrididae**

35. *Gryllacris appendiculata* Br. v. W. E. Carol. Ponape Isl.
36. *Gryllacris modestipennis* Karny E. Carol. Ponape Isl.



Superfam. **ACRIDOIDEA**

37. *Heteropternis obscurella* Blanch. W. Carol. Palau Isl. Babelthuap Isl.<sup>1</sup>, Yap Isl. E. Carolin. Ponape Isl.
38. *Locusta migratoria* L. subsp. *manilensis* Meyen. W. Carol. Palau Isl.
39. *Oxya gavisa* Walk. W. Carol. Palau Isl.
40. *Oxya intricata* Stål. W. Carol. Palau Isl. Truk Isl. Dublon Isl. Yap Isl. E. Carol. Ponape Isl.
41. *Valanga viridipes* Sjöstedt. W. Carol. Truk Isl.<sup>2</sup>
42. *Valanga ornata* Ramme. W. Carol. Palau Isl. Yap Isl.
43. *Valanga irregularis carolinensis* Sjöstedt. W. Carol. Truk Isl.
44. *Valanga nigricornis alleni* Rehn. W. Carol. Asor Isl. Mogmog Isl. Fassarai Isl.
45. *Carolinotettix montana* nov. spec. E. Carol. Ponape Isl.
46. *Paratettix* sp. W. Carol. Palau Isl.

Superfam. **GRYLLODEA**

47. *Gryllotalpa formosana* Shir. W. Carol. Truk Isl. E. Carol. Ponape Isl.
48. *Gryllulus oceanicus* Le Guill. W. Carol. Truk Isl. Palao Isl. Dublon Isl. Moen Isl. E. Carol. Ponape Isl.
49. *Ornebius novarae* Sauss. W. Carol. Truk Isl.
50. *Amusurgus karnyi* Chop. E. Carol. Ponape Isl.
51. *Metioche flavipes* Sauss. W. Carol. Truk Isl. Tarik Isl., Dublon Isl., E. Carol. Ponape Isl. Kusaie Isl.
52. *Rhcnogryllus flavipes* nov. spec. E. Carol. Kusaie Isl.
53. *Rhcnogryllus limbatus* nov. spec. W. Carol. Truk Isl. Dublon Isl. E. Carol. Ponape Isl. Kusaie Isl.
54. *Lebinthus bitaeniatus* Stål. W. Carol. Palao Isl. Angaur Isl. E. Carol. Kusaie Isl.
55. *Cardiodactylus novaeguineae* d. Haan. W. Carol. Angaur Isl. Palao Isl.
56. *Heterotrypus chopardi* nov. spec. W. Carol. Palao Isl. E. Carol. Ponape Isl.
57. *Aphonoides gracilis* Chop. W. Carol. Yap Isl. E. Carol. Ponape Isl. Kusaie Isl.

<sup>1</sup> Babelthuap = Babelthuop = Bebeldaob.

<sup>2</sup> Truk = Ruck = Ruk.



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### Explication of the plates

#### LAM. IX:

- Figs. 1-5: 1) *Homalopteryx pelewensis* Sauss. var. *atropunctata* nov. var. 2) *Heterocopus leprosus* Redtenb. ♂. 3) *Phaulula trukensis* n. sp. ♂. Penultimate tergite and cercus. 4) *Phaulula trukensis* n. sp. ♂. Subgenital plate. 5) *Phaulula trukensis* nov. sp.

#### LAM. X:

- Figs. 6-13: 6) *Phaulula carolinensis* n. sp. ♂. Penultimate tergite and cercus. 7) *Phaulula carolinensis* n. sp. ♂. Subgenital plate. 8) *Phaulula carolinensis* n. sp. ♀. Subgenital plate. 9) *Phaulula carolinensis* nov. sp. ♀. 10) *Dichophaula inexpectata* nov. sp. ♂. Penultimate tergite with cercus. 11) *Dichophaula inexpectata* nov. sp. ♂. Subgenital plate. 12) *Dichophaula inexpectata* nov. sp. ♂. 13) *Biróa zimmermanni* nov. sp. ♂.

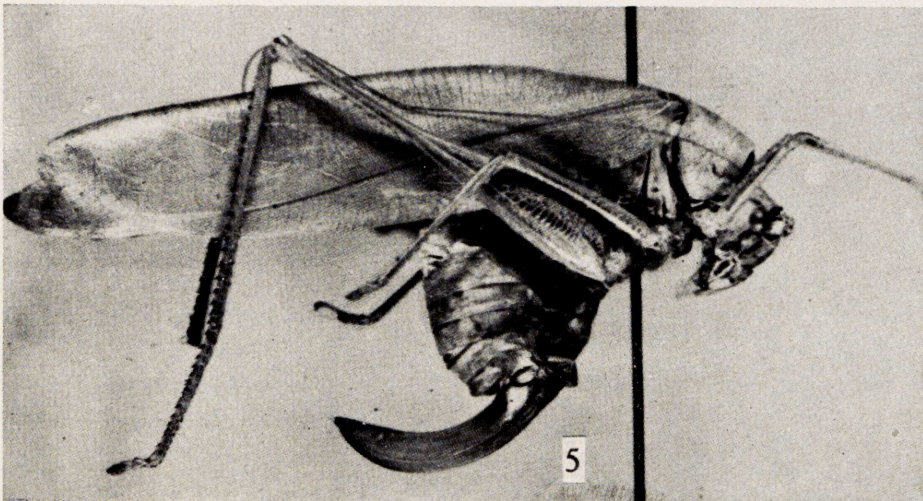
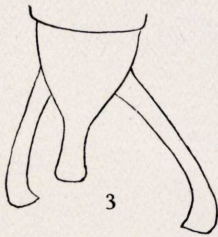
#### LAM. XI:

- Figs. 18-21: 18) *Salomona carolina* nov. sp. ♀. 19) *Salomona carolina* nov. sp. ♀. Head as seen in front. 20) *Salomona carolina* nov. sp. ♀. Elytron. 21) *Salomona dublona* nov. sp. ♀. Elytron.







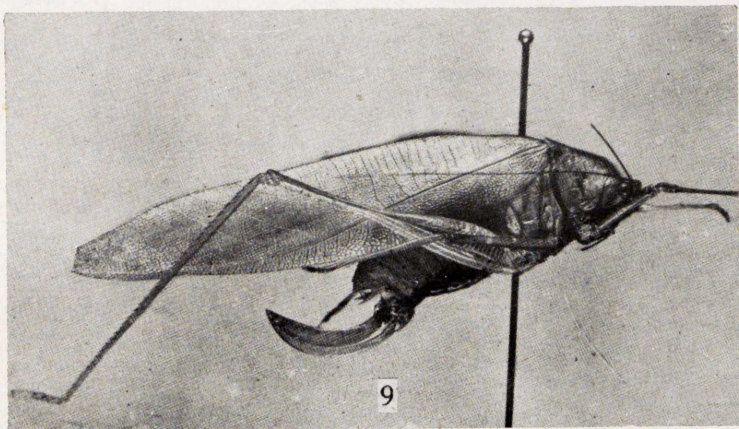
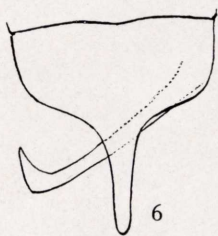
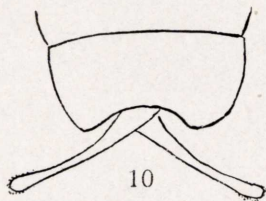
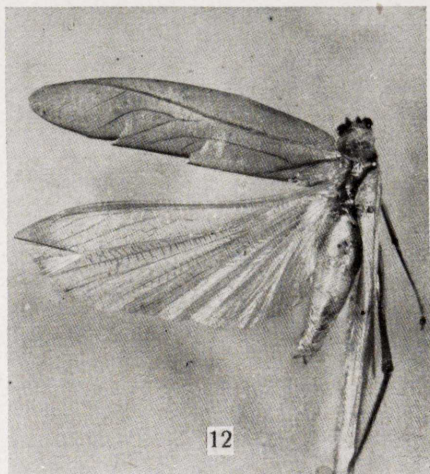


C. WILLEMSE: On a collection of *Orthoptera* from the Caroline Islands from the Bernice P. Bishop Museum of Honolulu







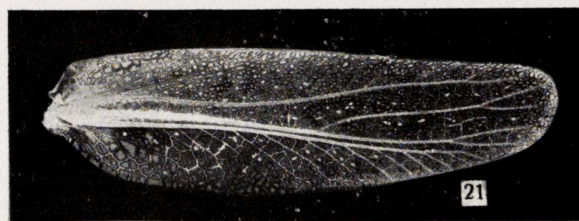
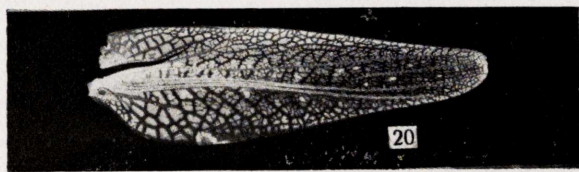
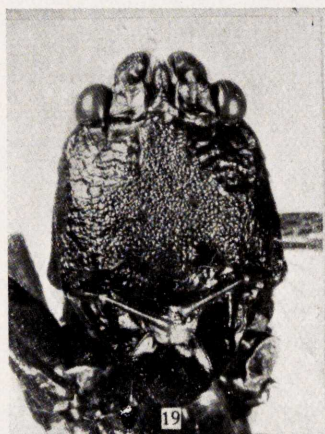
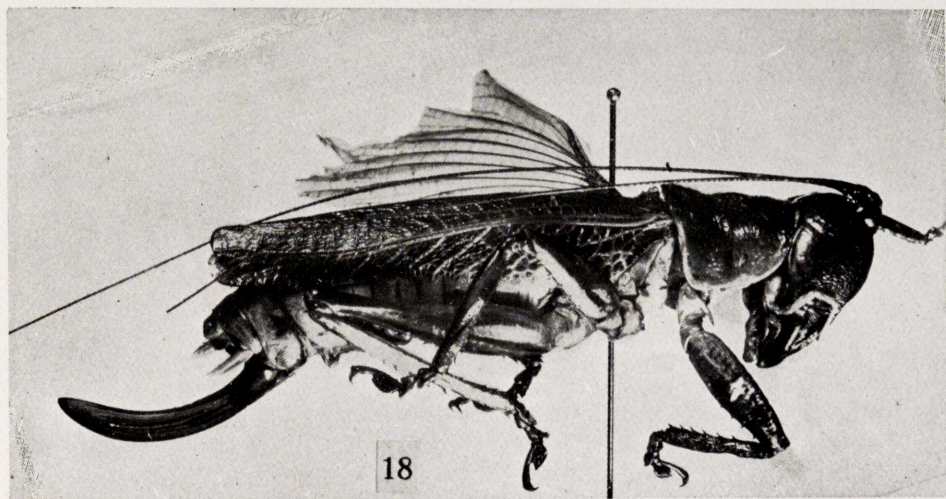


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